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more influenced by anodic polarization. This effect was especially noted with the series of specimens that also contained silicon. When the chromium content of the specimens reached between 11 and 14 percent chromium, and silicon was not present, a definite transition to anodic control occurred. As expected, when the chromium content increased, the corrosion was confined to smaller areas with deeper penetration.

The addition of silicon had the effect of reducing the critical range of chromium (that is, the chromium con-

tent sufficient to reduce weight loss) from between 11 to 14 percent to 8 percent or even less. Marked reductions in corrosion rate were associated with shifts of corrosion potential to more positive values.

¹ For further technical details, see Corrosion rates of ferrous alloys (Fe-Cr and Fe-Cr-Si) measured by polarization technique, by W. J. Schwerdtfeger, J. Research NBS 66C (Eng. and Instr.) No. 3, 245-254 (July-Sept. 1962).

²A study by polarization techniques of the corrosion rates of aluminum and steel underground for 16 months, by W. J. Schwerdtfeger, J. Research NBS 65C (Eng. and Instr.) 271 (1961); also, Corrosion rates measured electrically in an underground environment, NBS Tech. News Bull. 46, 25 (1962).

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Current Issues of the Journal of Research

Section A. Physics and Chemistry, Vol. 66A, No. 6, Nov.-Dec. 1962.

Heat of formation of nitronium perchlorate. A. A. Gilliland.

